

Dear Maxine —

Monday July 14
[1958]

Thanks loads for your lovely letter. I hope you all had a nice time of it at Harper's Ferry. It was nice of you to do this for Adelaide and the boys. They are lonely without me and I am lonely without them.

I'm sure that Danny is finding his new job stimulating and I'm also sure that he is performing very well. Even so, tell him to take it easy, and relax. After all, you are having a brutally hot Washington summer, and she ought not to hustle too much. Also, you and Russell should take it easy. It's unfortunate that the enzyme purification kept the two of you at the lab the other evening. Long days are exceedingly tiring when there are other obligations to be met, such as meals and housework.

Tonight five of us spent 40 minutes on the roof of this building, with brief interruptions, looking for Sputnik III. We failed to see the satellite, but enjoyed a perfectly lovely evening. The sunsets in Vancouver are absolutely gorgeous. We are ringed by mountains, range upon range. The nearby peaks become deep blue while the more distant pinks take on lighter hues. They appear perfectly flat, like a stage setting, and the effect is very dramatic. The sun went down behind a particularly impressive mountain peak which therupon seemed to be surrounded by a deep red fire. It could have served for the concluding scene of "Die Walküre".

I enjoy my walks to and from the lab. enormously because of this delicious weather, the interesting birds and flowers and because I allow myself no other form of amusement. We have tiny black and yellow birds, various kinds of quail and tiny sparrows, also a variety of birds which live in the yellow fields of grain.

The group here are awfully nice and a lively bunch of fellows. We have many of the difficulties

which I encountered in Markham's laboratory. There is no coarse vacuum and the pressure in water pumps falls at unpredictable moments. Yesterday no less than 3 valuable specimens were lost as H₂O from the water pumps sucked back in the flash evaporator. One of the specimens was my own.

The paper you are starting to put together will be complicated but don't call it a dismaying hodge-podge. I think it will be a valuable contribution even if not the final answer. People are very interested in just what is happening in the polyphosphatase phosphorylation reaction and your observations bring out a lot of interesting facts and suggest where further work is needed. I gave a seminar before people here on these points and aroused considerable interest.

Your Mg⁺⁺ requirement increasing with PO₄³⁻ decreasing is very intriguing and probably worth several days to pin down. I admit that later this ground would have to be covered again with pure enzyme but it wouldn't be surprising if the results came out the same.

Some time I'd appreciate a summary of your data of Marianne & Russell, in order to ponder over it & present it here. It's hard to think about because I've forgotten the details.

Thanks for taking care of the business with Audrey Stevens. I'll write to her concerning the risk of coming before she has been awarded a fellowship.

Have you had Alan check the matter of what happens when you mix Poly A + ADP? The stimulation observed when these are mixed must surely be

only a stimulation of ²⁻ each angle, because the amount of ADP that I used to add to get this "additive effect" or better was such that phosphorylation was surely suppressed. That is, you measure exchange at ad PO_4/ADP ratio approximating equilibrium conditions. When, now, poly A is added & extra counts observed they surely don't arise from phosphorylation. So there should be no net ADP synthesis in cases where poly A + ADP show stimulation of incorporation of counts.

The inhibition of ADP (and UDP?) exchange by the opposite polymer is certainly intriguing. Does polyA inhibit exchange for UDP? And if it does, is a similar effect observed with $\alpha\text{ApApApA}$?

I'm just now isolating the UMP from 5 grams of uridine. It was a hard 9 days' job. Now comes the matter of making the phospho amide, reacting it with H_3PO_4 and isolating UDP. I had thought of making CDP as well, but people around here haven't had experience making CDP and there might be many snags. It's not an interesting research problem and I may chuck it. There are perhaps more important things to do.

One question is whether to take advantage of the presence of Goldeind & Moffatt of try to make αApA once more, this time by way of the phospho amide. Moffatt thinks it can be done on a 5-10 μmole (as adenine) scale, on paper. I don't know. If there's

any pABA around ^{and} you'd like to have me try it;
you might send it or. otherwise, let it go.

Enclosed are the elutrons from an Etiole column -
I forgot to enclose these charts in Russell's letter. Note
that the peaks went bad & recovery of UV was
quantitative. I now want to try to recover penten, hexa-
& 7 unit crude from shorter digest time.

Best to Alan & Russell

Sincerely
Tom